There is one statement that we feel cannot be accepted without some consideration: "If a man ever scales 9 stone there must have been a time at which he weighed $4\sqrt{5}$ stone." Is this necessarily so? S. B.

LECITHIN AND ALLIED SUBSTANCES.

Lecithin and Allied Substances: The Lipins. By Dr. H. MacLean. ("Monographs on Biochemistry.") Pp. vii + 206. (London: Longmans, Green, and Co., 1918.) Price 7*s.* 6*d.* net.

THE time had come when an account of the chemistry of lecithin and allied substances should be written and must be read by everyone interested in bio-chemistry. Ten years ago it had not. At that time the subject could only have been presented as an unprofitable series of disputes on insecure premises. Now there must be many for whom this monograph will be a revelation, many who, though they may have read, have not collated the important contributions to the elucidation of this most difficult subject that have appeared in the last few years, and who, when they see this done admirably, as it is done here, will realise that a new epoch in the history of bio-chemistry is being marked out.

It is just ten years since Dr. MacLean published the first of a series of papers in which, starting from the fact that the amount of choline obtained in the hydrolysis of lecithin was always less than the supposed structure of this substance required, he established good ground for his belief that this is due to the fact that lecithin, as ordinarily obtained, is mixed with kephaline, in which, as we know now from the work of Parnas and his associates, the basic group is aminoethanol. Dr. MacLean has described a method of purifying lecithin, so that it gives the theoretical yield of choline, and, therefore, is free from kephaline. Other impurities that are associated with lecithin which he can by his method remove may, indeed, so disguise it as to make it appear as some one or other of those vague phosphatides of which too many have been described, and of which we are told little but that they are soluble in this and insoluble in that solvent, and contain nitrogen and phosphorus in a certain proportion. Lecithin and kephaline now mean something more than this.

Then from the limbo of protagone there have emerged sphingomyelin and the cerebrosides, with their common basic component sphingosine, substances that forty years ago Thudicham had seen before their day had come. In the last few years the work of Thierfelder, of Rosenheim, of Lapworth, and, above all, of Levene, who, to the advantages of a richly endowed institution, has added the enthusiasm and the patience of a great investigator—work that has finality—has given to these somewhat ghostly shapes reality and precision of outline. This work on the constitution of sphingosine and on the strange fatty acids of sphingomyelin and the cerebrosides confers on these substances a living interest, now that their chemical structure is acquiring definition, as great as that which has been focussed, for instance, on the nucleic acids or on hæmatine. In all there are the same elements of novelty, mystery, and wealth of biological significance. Dr. MacLean is to be congratulated on his opportunity no less than on the use he has made of it.

It was no doubt unavoidable that this book, coming just when it has, should still contain, in addition to the chapters describing the advances of recent years, whole sections devoted to the unwelcome task of pronouncing judgment on so many substances, named and unnamed, the discovery of which has not been established. Dr. MacLean would probably, too, have preferred not to have had to commit himself in the matter of nomenclature. The things that count have good enough names. Lecithin, sphingosine, and sphingomyelin are appropriately and successfully named, though it is true as much cannot be said for kephaline, phrenosine, or kerasine. Schematic nomenclature matters less, and it is in this that agreement has not been attained. When the subject reaches the schools this will be added to it.

A FAUNISTIC SURVEY.

The Invertebrate Fauna of Nottinghamshire. By Prof. J. W. Carr. Pp. viii + 618. (Nottingham: J. and H. Bell, Ltd., 1916.)

THE Nottingham Naturalists' Society is to be congratulated on having produced a finely executed survey of the invertebrate fauna of the county. It is part of a survey which was resolved upon when the society completed its fiftieth year, the task being placed in the competent hands of Prof. J. W. Carr. He has been efficiently helped by collectors and by specialists, and it is satisfactory to read that "practically every species recorded has been submitted to and named by a leading authority in the group to which it belongs." The whole work shows a high standard of carefulness, and it will be of great service to active local naturalists, who have now an authoritative list to which they may add. That there are many additions to be made is plain when we look at the sparseness of the records as regards Nematodes, Rotifers, Leeches, and some other classes.

Among the excellent features of this "Fauna" we may mention (1) the precision which so often marks the record of the particular kind of environment frequented by a particular species, and (2) the insertion of introductory descriptions of phyla, classes, orders, and sometimes even families. They are tersely and clearly phrased, and greatly increase the value of the lists. The consistent use of different type-founts for the various grades of classification from phylum to species is another instance of carefulness, and the whole typography is excellent. As data accumulate, the indefatigable editor proposes to append supplements, and already there are nearly 300 additional species of Diptera waiting for admission. The Vertebrate

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Fauna and the Flora will be dealt with in separate volumes. We are glad to know that along with the published records there is growing up a local collection of actual specimens—in short, a regional survey museum. For these "Faunas" and "Floras" are not appreciated at their highest value when considered by themselves; their larger importance is as components of an integrated survey; and those who may think that we are saying too much about a book consisting mainly of careful records of the finding of hundreds of spiders, insects, molluscs, and worms have yet to understand that one of the factors in secure progress must be—more than heretofore—an intimate and scrupulously accurate survey of all the facts of every region.

OUR BOOKSHELF.

A Handbook of Briquetting. By Prof. G. Franke. Translated by F. C. A. H. Lantsberry. Vol. ii., *Briquetting of Ores, Metallurgical Products, Metal Swarf, and Similar Materials, including Agglomeration.* With Appendices. Pp. xi+214. (London: C. Griffin and Co. Ltd., 1918.) Price 15*s.* net.

The promised second volume of the translation of Prof. G. Franke's work on briquetting has now appeared, dealing with the briquetting of materials other than fuels. These materials are, first and foremost, iron-ore, to which the greater part of the work is necessarily devoted; next flue-dust and certain other metallurgical by-products; and, finally, metallic borings and turnings, which the translator is pleased to designate "swarf." The work is distinguished by the same amount of careful detail, particularly in the description of the mechanical appliances, that characterised the first part, but it is evident that the author has not the same practical familiarity with this portion of his subject as he displayed in dealing with fuel in his former volume. Much of his information is derived from current literature, and is neither so complete nor so accurate as it was in the case of coal. His handling of the important subject of the briquetting of iron-ores is far inferior, for example, to the paper on the same subject read before the Iron and Steel Institute last autumn by Messrs. Barrett and Rogerson. For instance, the list of Swedish briquetting works given by the author refers only to the year 1906, and is now hopelessly out of date. Still worse is the total omission of the entire group of modern sintering processes, such as the Dwight-Lloyd, Huntington-Heberlein, Greenawalt, etc., which are generally looked upon as the most promising of any of the methods hitherto devised for treating iron-ores. It cannot be denied that these defects rob the work of much of its value, though anyone desiring detailed accounts of the older methods will find them given very fully.

As regards the translation, it is possibly an improvement on that of the first volume, but still leaves very much to be desired.

State Geological and Natural History Survey. (State of Connecticut. Public Document No. 47.) Vol. v., Bulletin 22. *Guide to the Insects of Connecticut.* Part iii. *The Hymenoptera or Wasp-like Insects of Connecticut.* By H. L. Viereck, with the collaboration of A. D. MacGillivray, C. T. Brues, W. M. Wheeler, and S. A. Rohmer. Pp. 824+plates x. (Hartford: Printed for the State Geological and Natural History Survey, 1916.)

Collectors and observers of insects in New England are fortunate in having at their disposal such a "guide" as this to lead them in the discrimination of genera and species in that most fascinating, but systematically most difficult, order, the Hymenoptera. Some of the most eminent of American entomologists have collaborated in the production of this volume, and their careful diagnoses and analytical tables are rendered the more comprehensible to the beginner by clear structural text-figures. As very many genera are common to both the western and eastern continents, this book will be of value to European workers, who will be interested to find that not a few of the Connecticut species of ants, wasps, and bees are identical with familiar British insects. Although the treatment is predominantly systematic, information on the habits of many of the families is furnished, and the plates illustrating gall-forming and nesting activities are instructive. Good line-drawings would have been preferable to the photographic reproductions of museum specimens of insects, many of which are badly set and some mutilated. The great merit of the book consists in its presentation of the modern classification of all the families and the more important genera of Hymenoptera in a single, if somewhat bulky, volume.

G. H. C.

The Baby. ("Manuals of Health," ii.) By Dr. S. Seekings. Pp. 63. (London: Society for Promoting Christian Knowledge, 1918.) Price 9*d.* net.

We do not find anything particularly novel in this little book on baby management, nor does it seem to present anything that cannot be found in several other books of a similar type. It is written clearly and simply, and the directions can be easily followed. For artificial feeding it is recommended that the milk be always scalded, but no direction is given on the importance of cooling in hot weather. In the chapter on common ailments (or elsewhere) we find no mention of vaccination and the treatment of the arm, while, though comparatively infrequent in the infant, measles and whooping-cough are discussed. It is stated that measles causes more deaths among children under a year old than at any other age. This is incorrect: almost twice as many children die in their second year from this cause as in the first year, and the measles death-rate in the second year is nearly eight times that in the first year. Some useful directions are given in an appendix for the preparation of barley and albumin water, etc., and for knitting infants' garments.

R. T. H.

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